

# Dodge Wood Split Pulley Co.

Manufacturers of the Dodge Patent System of Transmission of Power by Ropes and Grooved Wood Pulleys.

81-89 ADELAIDE STREET WEST

TORONTO, CAN.

MANUFACTURERS OF THE CELEBRATED

DODGE WOOD SPLIT PULLEYS



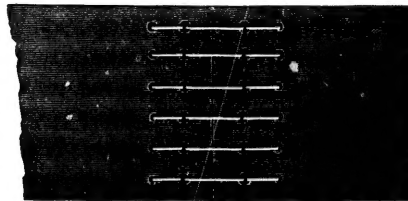
# WORTH MANY TIMES ITS COST POWER AND TRANSMISSION

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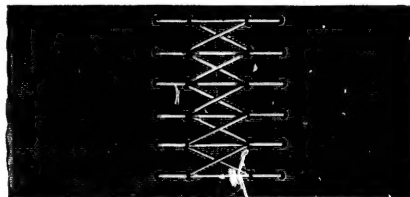
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And as a special inducement we will send to each new subscriber forwarding us \$1.00, a 3-inch sample of a new method of joining belts with a lacing or thong, which is worth to any manufacturer or mechanic many times its cost.



**FIG. 1.**

This simple method of lacing will save hundreds of dollars to any large manufacturer every year in the wear of lacing and belts. Fig. 1 shows as run next to the pulley. Fig 2, the opposite side.



**FIG. 2.**

Of this New Lacing Process, a prominent manufacturer says :  
We have used this method on all our belting for years, and find it the cheapest and best method we have ever seen tested. We have one drive belt, 16 inches in width, stitched as above, that has been running constantly for three years. Shows no signs of weakness to this day. We have one drive belt, 30 inches wide, transmitting 150 horse-power, which has been running now 13 months, with same lacing, and never has been touched. It effectually prevents the annoyance of ragged ends to belting and the restitching so common to other methods.

The Journal is issued monthly, and every number will contain drawings and specifications, illustrating the various ways that power can be transmitted by ropes and wood pulleys, under the Dodge Patent System. Send your subscriptions to the **Dodge Wood Split Pulley Co., 81-89 Adelaide St. W., Toronto.**

# The Transmission of Power

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## Ropes and the Dodge Patent Wood Pulleys

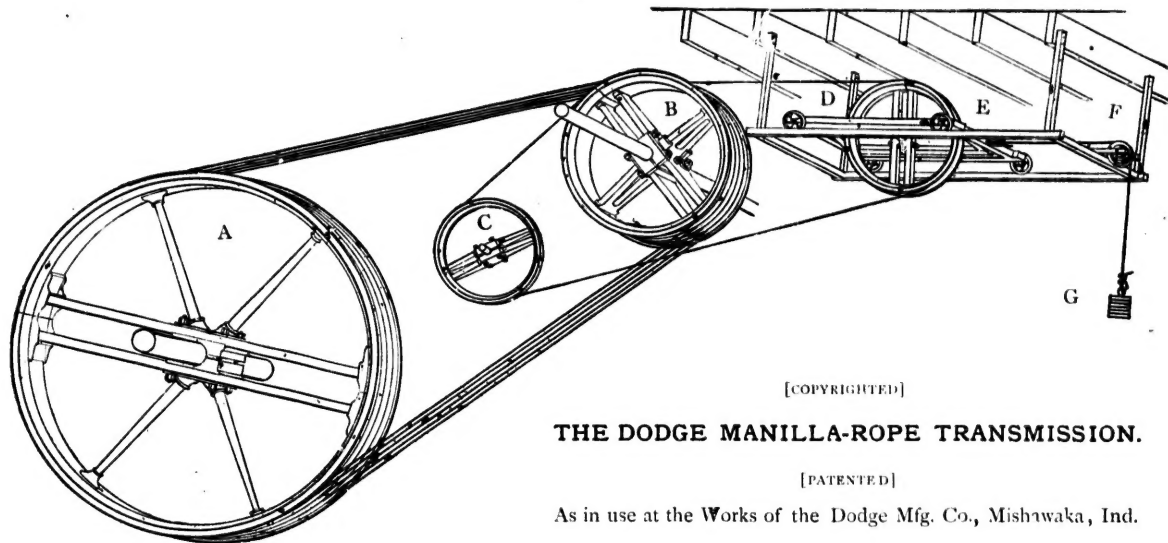
♦ ♦ **T**HE great advantage of Wood over Iron as a material for Belt Pulleys (or drums) to transmit power economically, has induced **the Dodge Wood Split Pulley Co.** to introduce grooved hardwood pulleys for the special purpose of transmitting power by ropes (Manilla tallow laid), and in this connection Mr. Dodge has taken out Canadian Letters Patent for a system of applying the ropes, adjusting the pulleys and taking up slack, that is, giving the most unqualified satisfaction.

This System of transmitting power by ropes is cheaper and superior to belts in many cases, such as where the driven shaft is at right angles with the driver, also where the drive is perpendicular, particularly when it is quarter twist and perpendicular; also where the driver and driven are close together; also for long drives, such as across a street or a stream, etc. For transmitting the power from an engine to the line shaft this system is unequalled, there is no slipping or jerking, the engine will run smooth and

steady all the time, not like a heavy belt, which is always more or less flapping, jerking and stretching, then slipping and losing power. It is safe to say that an engine hitched up by the Dodge Rope System will do 25 per cent. more work on the same consumption of fuel than the same engine would do with a belt. In this pamphlet we give four illustrations and commenting articles of transmissions now in operation, each one being different from the others, simply to illustrate some of the various situations to which this system can be successfully applied, all selected from different numbers of the *Journal Power and Transmission*. We have put up a number of the Dodge Patent Rope Transmissions during the past year, all of which are in most successful and satisfactory operation, as certified by the testimonials following, of well known manufacturers that have them in use. Parties who are in want of anything in this line or who are interested in the efficient and economical transmission of power are cordially invited to call at our Works, **81-83 Adelaide St. West**, and see the ropes and wood pulleys in operation, as we are driving our whole factory by this system.

# Rope Transmission.

Fig. 3.



[COPYRIGHTED]

## THE DODGE MANILLA-ROPE TRANSMISSION.

[PATENTED]

As in use at the Works of the Dodge Mfg. Co., Mishawaka, Ind.

- A—Main Driving Pulley on Engine Shaft, diameter, 144 inches.
- B—Main Driven Pulley on Line Shaft, diameter, 64 inches.
- C—Winder for Driven, diameter, 48 inches.
- D—Carriage and Idler, for taking up Slack, diameter, 48 inches.

- E—Travelling Carriage on Wheels
- F—Track for Carriage.
- G—Impelling and Tension Weight.
- Rope travel, 3,420 FPM. Power transmitted, 150 HP.

# Rope Transmission.

No. 6.

♣ ♣ THE illustration, as shown opposite, is one of peculiar construction, and represents an engine transmission of power by a manilla rope, under the Dodge system of patents,\* and is shown as in actual use at the works of the Dodge Mfg. Co., at Mishawaka, Ind.

The system herewith illustrated and described is one of great interest to all consumers of power. Inasmuch as it takes the place of expensive gearing and broad belts, the advantages to be derived may be thus summarized:

To transmit the same power with a rope *versus* a like power with a wide belt, first, requires much narrower faced pulleys; consequently, much less expensive; 2nd, the interest on the money invested in a belt will more than supply the rope, saying nothing about the wear and tear; 3rd, better power, from the fact that all sliding of the belt is overcome, and the rope gear becomes as positive as the cog gear.

The transmission consists of a series of wood split pulleys, and an ordinary manilla rope (tallow laid).

The engine used is an automatic, and the size of the cylinder is 18 x 40, making 90 RPM, and transmits 150 HP., the driver, A, and driven, B, have each several grooves, in which are wound the ropes, the number of wraps being used, as in previous cases, to gain surface in contact, for adhesion of the rope. The winder, C, in this case, is simply used to convey the rope to the slack carriage, to prevent obstruction. This, together with the carriage

pulley, D, are each single grooved. The device for taking care of the slack, and giving the proper tension to the rope, is the same as those illustrated in former issues of POWER AND TRANSMISSION, and is shown at E, with the impelling weight at G. The slack side of the rope is paid directly from the driver to the carriage, E, which, it will be seen, takes in and pays out slack as it occurs, and acts also for a tension on the rope. The weight at G may be increased or decreased with the power.

This apparatus was erected and started December 2, 1884, and has been running constantly since, with same splice, and transmitting an average of 150 HP.

The rope shows no signs of wear, and looks as though it would last for years to come.

The rope is an ordinary one inch diameter manilla, and travels at a velocity of 3,420 FPM.

We make the following summary:

Velocity of rope, 3,420 FPM. Transmits, as above, 150 HP. (indicated). The tension on the rope is, therefore,  $\frac{3500 \times 150}{3420 \times 11} = 1,408 + 106$  pounds (one-half the weight in the weight-box) = 1,608 pounds, which is the strain on the rope. There being five pulling wraps of rope, hence the strain would be divided five times =  $\frac{1608}{5} = 321$  lbs. strain on the rope =  $3\frac{1}{4}$  per cent. of the breaking strain; it being estimated as safe to use 10 per cent. of the breaking strain of the rope.

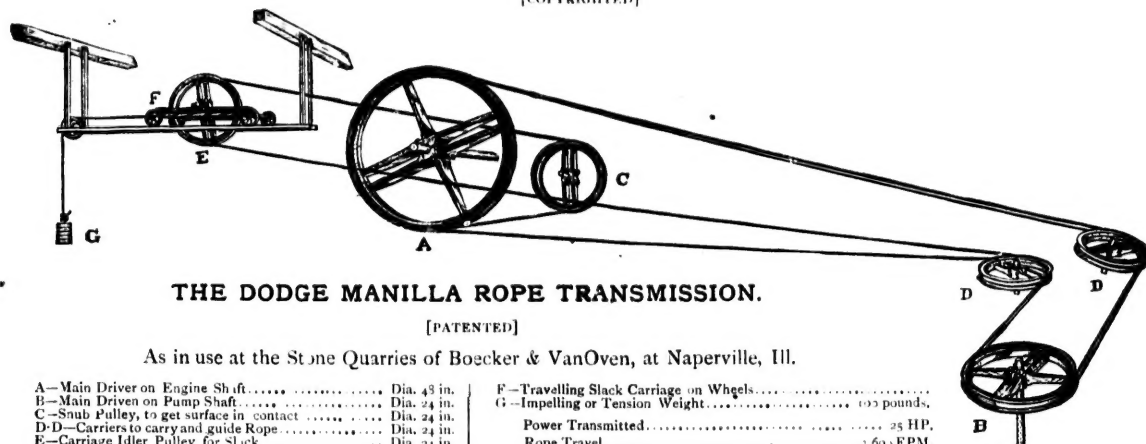
[The breaking strain of a one-inch manilla rope is 9,000 pounds.]—*Power and Transmission Journal.*

\* Dodge Mfg. Co., Mishawaka, Ind., manufacturers.

# Rope Transmission.

Fig. 12.

[COPYRIGHTED]



♦ ♦ THE above illustration shows the Dodge system of manilla rope transmission,\* as in use at the Stone Quarries of Messrs. Boecker & VanOven, of Naperville, Ill.

This cut represents a peculiar hook-up, and one which is often met with in the transmission of power. The drive pulley is about fifteen feet lower than the driver, and being a perpendicular shaft, makes a quarter turn.

This transmission was erected and started up in June, 1886, and has been running constantly ever since, conveying the power, 25 HP., to drive a number six centrifugal pump, used for keeping the water out of the quarries. A one-half inch manilla rope, tallow-laid, is employed, travelling at a velocity of 3,600 FPM. The rope is in prime condition. As to the satisfaction given by this transmission, note the letter from the Messrs. Boecker & VanOven elsewhere in this issue.

The transmission is a very simple one, and consists of a series of wood split pulleys, and an ordinary manilla tallow-laid rope. The power is taken from a 25 HP. engine, making 300 RPM. Referring to the cut, A represents the driver, and is 48" diameter; B, the driven, and is 24" diameter, located 15 feet lower than the engine, and about 85 feet distant from the same. The pump shaft is perpendicular, hence the pulley runs horizontally, and causes the rope to make a quarter turn. This is easily accomplished by tipping the idlers or carriers DD, to get surface in contact with the driver; to get back on to the travelling carriage at F, the winder C is used. It will be noticed that the rope passes twice around the driven and leads the slack rope directly to the carriage, the slack being taken up at the driver end for convenience. The weight used is 100 lbs., just sufficient to carry up the slack of the rope. The driver, driven, and the two carriers, DD, have each two grooves; the winder C, and carriage pulley, E, have each one groove.

The device for taking care of the slack of the rope and giving proper tension, is the same as those illustrated in POWER AND TRANSMISSION, and is shown at F, and takes in and pays out

slack as it occurs from the stretch of the rope, caused by atmospheric changes. It also acts, by changing the weight, to increase or diminish the power as required.

We make up, from the above, the following mathematical summary:

Velocity of the rope, 3,600 FPM., transmits, as above, 25 HP. (estimated). The tension on the rope is, therefore,  $\frac{25 \times 33000}{3600} = 229$  lbs. + 50 lbs. (one-half the weight in the weight-box) = 279, which is the strain on the rope; but there being two wraps, the strain would be  $2 \times 279 = 558$  lbs., and is about six per cent of the breaking strain; it being estimated as safe to use ten per cent. of the breaking strain of the rope, with this system. The breaking strain of a  $\frac{1}{2}$ " manilla rope is estimated at 2,250 pounds.—*Power and Transmission Journal*.

OFFICE OF BOECKER & VANOVEN STONE QUARRIES, )  
NAPERVILLE, ILL., OCT. 28, 1886 )

*Dodge Mfg. Co., Mishawaka, Ind.*

GENTLEMEN.—Yours of 27th inst. at hand. In answer would say, we use your patent system for transmitting power by manilla rope, to run a No. 6 centrifugal pump in our quarries. It does all you claim for it, and gives entire satisfaction.

You will remember that we had to apply the transmission in a rather difficult position, as the driven pulley is situated about 15 feet lower than the driver, and makes a quarter turn, as the pump shaft stands perpendicular. The distance of the latter from engine is about 85 feet. The  $\frac{1}{2}$ " rope used is a surprise to everybody that sees it doing so much work and so easily, without any jarring.

Yours truly,

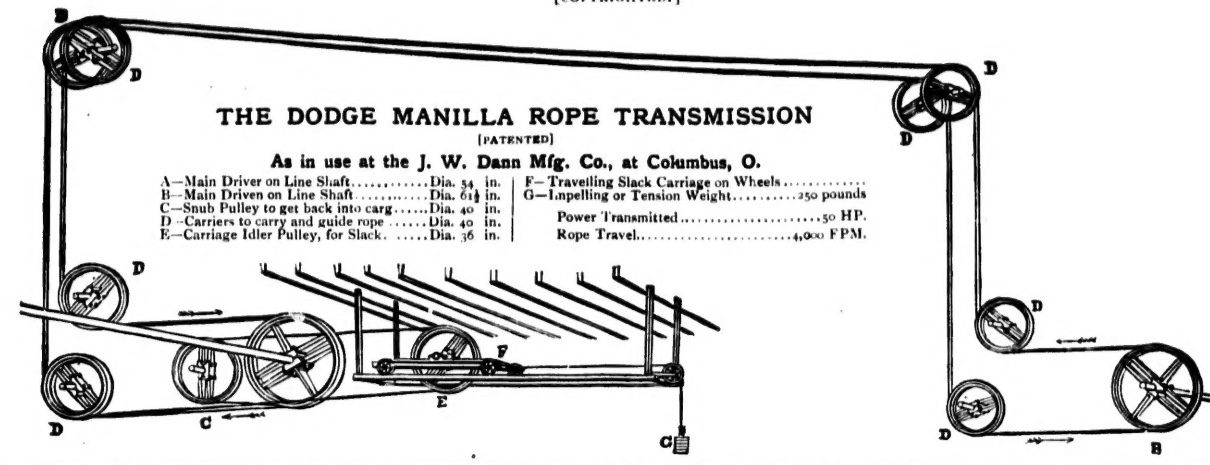
BOECKER & VANOVEN

\* Dodge Manufacturing Co., Mishawaka, Ind.

# Rope Transmission.

Fig. 13.

[COPYRIGHTED.]



♦ ♦ THE above illustration shows the Dodge system of manilla rope transmission,\* as in use at the works of J. W. Dann Mfg. Co., at Columbus, Ohio.

This cut represents a very handsome hook-up in the way of a transmission of power. It is peculiar and one that is often met with in practice, and demonstrates fully the practicability of the system. That it may be fully understood and appreciated, we give the following description :



## ROPE TRANSMISSION—Fig. 13, continued

This transmission was erected and started up in September 1886, and has been running constantly ever since, conveying the power, (50 H. P.) to drive a line shaft on the opposite side of a street. This shaft is on a parallel line with the main line or power end. It became necessary to prevent obstruction in the street to go back from the power end and up through the upper stories of the main building over idlers, then across the street into the upper story of the building where power is to be used, then down again into the lower story where is located the driven shaft.

Now that this is desirable will be seen at a glance. The transmission is a very simple one and consists of a series of wood split pulleys and an ordinary manilla tallow laid rope.

The power is taken from the main line, making 280 RPM. Referring to the cut, A represents the driver and is 54" diameter, with two grooves. B the driven is 61½ inches diameter, with two grooves located as stated in a building on the opposite side of the street, about 125 feet from the driving end. The idlers D are each 40" diameter and each has two grooves and the carriage pulley is 36" diameter with one groove.

It will be noticed that the rope passes twice around the driver and leads the slack rope up over the carriers and directly unto the carriage pulley, the slack being taken up at the driving end for greater convenience; will say however, that the slack could be cared for from the driven end as well. The weight used is 200 pounds, just sufficient to carry up the slack of the rope. The

device for taking care of the slack of the rope and giving proper tension is the same as those illustrated in former issues of *Power and Transmission*, and is shown at F, and takes in and pays out slack as it occurs from the stretch of the rope caused by atmospheric changes. It also acts by changing the weight to increase or diminish the power as required.

We make the following mathematical summary:

Velocity of the rope, 4,000 FPM., transmits 50 HP., (estimated). The tension on the rope is therefore  $\frac{5000 \times 50}{4000} = 412 + 100$  lbs. (one-half the weight in the weight box) = 512 lbs., which is the strain on the rope; but there being two wraps, the strain would be  $2 \times 512 = 256$  lbs. and is about six per cent. of the breaking strain; it being estimated as safe to use 10 per cent. of the breaking strain of the rope with this system. The breaking strain of a ½" manilla rope is estimated at 4,000 pounds.—*Power and Transmission Journal*.

As to the satisfactory performance of the above transmission the following letter from the purchasers will prove:

COLUMBUS, O., Nov. 20th, 1886.

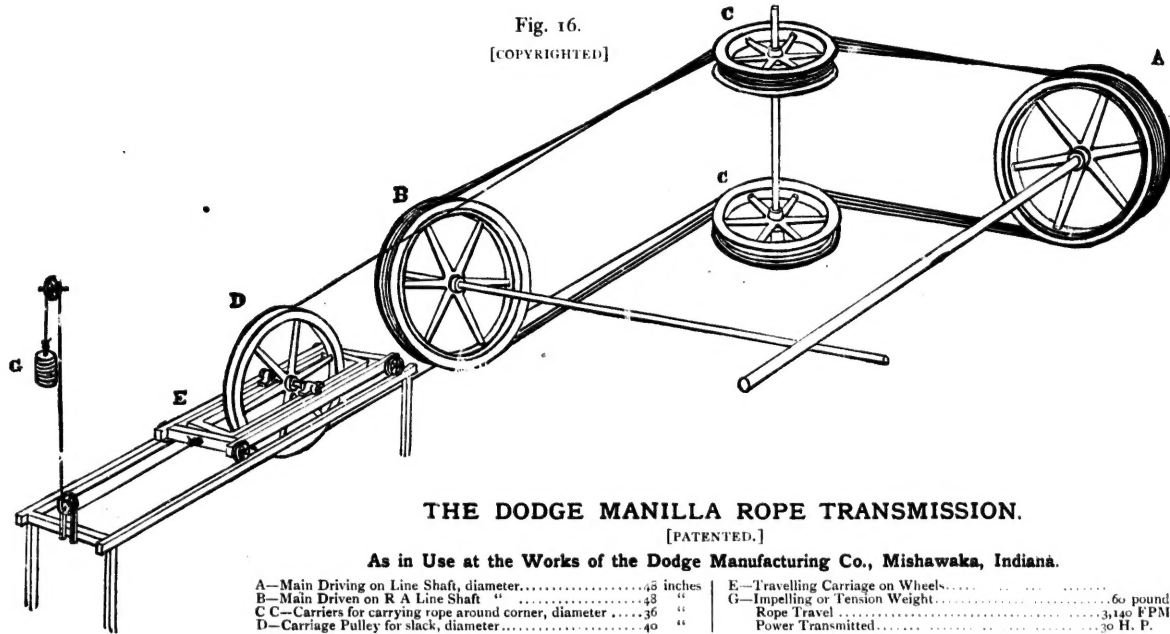
*Dodge Mfg. Co., Mishawaka, Ind.*

GENTLEMEN,—Yours of 18th inst. at hand. In answer would say we have nothing around our factory that is more satisfactory than the Dodge Manilla Rope Transmission. I see no reason why it is not a great success. It is the wonder of all who see it.

Yours truly,  
THE J. W. DANN MFG. CO.

# Rope Transmission.

Fig. 16.  
[COPYRIGHTED]



## THE DODGE MANILLA ROPE TRANSMISSION.

[PATENTED.]

As in Use at the Works of the Dodge Manufacturing Co., Mishawaka, Indiana.

A—Main Driving on Line Shaft, diameter.....	48 inches	E—Travelling Carriage on Wheels.....	
B—Main Driven on R A Line Shaft ".....	48 "	G—Impelling or Tension Weight.....	60 pounds
C C—Carriers for carrying rope around corner, diameter.....	36 "	Rope Travel.....	3,140 FPM.
D—Carriage Pulley for slack, diameter.....	40 "	Power Transmitted.....	30 H. P.

## ROPE TRANSMISSION—Fig. 16, continued

OUR illustration of Manilla Rope Transmission for this month is one of great interest to all manufacturers, inasmuch as it demonstrates the simplicity with which a shaft may be run at right angles to the driver and with little or no loss of power. It is a well known fact, however, that with gears there is a great loss of power from friction, and many other disagreeable points of contention; also with a belt and set of mule pulleys, there is a great loss by imperfect contact of the belt with the pulleys, journal friction, and other annoyances sufficient to condemn it. On the contrary, with the Manilla Rope System, under the Dodge Patents,\* a shaft may be driven at right angles to another with the same efficiency as two parallel shafts are ordinarily driven.

The right angle transmission consists of a series of Wood Split Pulleys with grooves for the rope, and an ordinary manilla rope, (tallow laid.)

The power is taken from the main line which makes 250 RPM. and transmits about 20 HP.

The driver A and driven B, and mule pulleys CC each have four grooves, and the carriage pulley D has one groove. It will be noticed that the driver A and driven B act as winders, and the rope is wound from one to the other to get surface in contact; the mule pulleys CC are simply carriers, carrying the rope around the corner, and are so placed that the travelling carriage always keeps the rope at an even tension, so that the ropes will always follow the grooves, and the rope is thus guided to and from the driven, always keeping its alignment.

\* Dodge Manufacturing Co., Mishawaka, Ind.

The carriage above referred to, or device for taking care of the slack and giving proper tension to the rope, is the same as those illustrated in former issues of *Power and Transmission*, and is shown at E, with impelling weight at G; the slack side of the rope being paid directly from the driver to the travelling carriage, leading back on to the driven. The tension weight serves a double purpose, taking care of all slack caused from the stretch of the rope or from atmospheric changes, and for a proper tension on the rope. Should a change occur whereby more power should be required, simply adding more weight would increase the power in proportion to the foot pounds carried, which multiplies with the number of wraps used.

The merits of this system are its simplicity, great efficiency, cheapness, and wonderful saving in journal friction as compared with gears or a heavy belt with mule pulleys.

This particular transmission has been running constantly for 4 months, and never has given a minute's trouble. The rope shows no signs of wear and looks as though it would last for years. The rope is an ordinary  $\frac{1}{2}$ " diameter, and travelling at a velocity of 3140 FPM.

We make the following mathematical summary: Velocity of the rope 3140 FPM, transmits as above 20 HP. The tension on the rope is therefore  $\frac{3140 \times 20}{3140} = 211 + 30$  pounds, (one-half the weight in the weight box) equals 241 pounds, the total strain on all the ropes; there being 4 pulley ropes, hence the strain will be divided 4 times, equals  $\frac{241}{4}$  equals 60 pounds, which is 3 per cent. of the breaking strain of the rope; it being estimated as safe to use 10 per cent. of the breaking strain of the rope in practice, with this system.

The breaking strain of a  $\frac{1}{2}$ " manilla rope is 2250 pounds.—*Power and Transmission Journal.*

# TESTIMONIALS

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DODGE WOOD SPLIT PULLEY Co'y.

TORONTO, Ont., June 22nd, 1887.

GENTLEMEN,—We have had one of your Rope Transmissions for transmitting the power from our (50) fifty HP engine to line shaft, in use six months, and find it very satisfactory in every respect, and we consider it superior to any other way of transmitting power. Wishing you every success.

Yours truly,

A. R. CLARKE & CO.



THE DODGE SPLIT PULLEY Co., Toronto.

TORONTO, June 20th, 1887.

DEAR SIRs,—In reply to your enquiries as to how the rope transmission (which you placed in our factory for driving machinery in picking room, &c.) was working, we would say that it is giving us every satisfaction. Although the work it is doing is heavy there seems to be no friction, and very little wear and tear of the rope and grooves.

Yours truly,

STANDARD WOOLLEN MILLS,

R. E. CHAPMAN,  
Sec'y.

THE DODGE WOOD SPLIT PULLEY Co., Toronto.

TORONTO, June 21st, 1887.

GENTLEMEN,—I have much pleasure in stating that the Rope Transmission put in my factory one year ago to transmit power from the engine to the line shaft has proved very satisfactory, and has run since then without a fault. The Rope Transmission with which I supply power to the large factory of Messrs. Keith and Fitzsimmons and which you put in about two months ago is also giving excellent service. This Transmission, which runs across the street 150 feet, with the shafts running at right angles and in opposite directions, is considered by experts to be the most difficult piece of Rope Transmission in the Dominion. The third Transmission, which is conveying power from the lower flat to the upper one, is also giving satisfaction. Comparing the way in which we were annoyed with breakages of the belt, which runs at right angles, and the great strain on the shaft through the tightness of the belt, with the ease with which the shafting is now run by the Rope Transmission, calls forth my highest praise of that system of transmitting power.

You are at liberty at any time to send parties to my factory to examine same.

Yours truly,

W. H. BANFIELD.

## TESTIMONIALS—Continued

TORONTO, ONT., JUNE 21st, 1887.

DODGE WOOD SPLIT PULLEY CO., Toronto, Ont.

GENTS,—We have much pleasure in testifying to the superiority of and recommend to the public your system of transmitting power by Manilla Rope. We think the motion more positive, and the transmission at least 25 % lighter than Belts or Gears. We are using your system in our factory to run on line shaft transmitting 25 Horse Power. With best wishes for your success,

We are, respectfully, AMERICAN RATTAN CO.

TORONTO, JUNE 20th, 1887.

DODGE WOOD SPLIT PULLEY CO., Toronto.

DEAR SIRs,—Having had two of your Rope Transmission in use in our factory for about three months, we beg to say that it gives us entire satisfaction, certainly all you claimed for it, being a great saver in fuel and working entirely to our satisfaction.

Yours truly, R. & T. WATSON.

TORONTO, June 22nd, 1887.

DODGE WOOD SPLIT PULLEY CO., Toronto.

DEAR SIRs,—We have pleasure in saying that the Rope Transmission of Power has worked well with us, it saves steam and friction and is noiseless, all great advantages, we think.

Respectfully yours, MORSE SOAP CO., John Taylor & Co.

TORONTO, July 6th, 1887.

THE DODGE WOOD SPLIT PULLEY CO., Toronto, Ont.

GENTLEMEN,—In reply to your enquiry as to how we find the working of the Rope Transmission, we have much pleasure in saying that it gives us every satisfaction, and can confidently recommend it to all users of machinery, especially flour mills and grain elevators. We have had two of them in use at our elevator, at Burketon, for nearly a year, and therefore are able to recommend them.

Yours very truly, J. B. MCKAY & CO.

TORONTO, June 24th, 1887.

THE DODGE WOOD SPLIT PULLEY CO., Toronto.

DEAR SIRs,—Replying to your enquiry, re Rope Power Transmitter, placed in our works last fall, we have much pleasure in stating that it has accomplished, and is now doing all that you claim for it. It is noiseless in operation, very easily adjusted, and altogether gives perfect satisfaction. We can with confidence recommend it to any requiring power to be conveyed at a considerable distance from a line shaft.

Yours very truly,

THE E. & C. GURNEY CO., Limited.

CENTRAL PRISON, TORONTO, 23rd June, 1887.

THE DODGE WOOD SPLIT PULLEY CO., Toronto.

GENTLEMEN,—You desire me to report upon the set of pulleys put in one of the workshops to transmit power by a rope to a counter shaft at right angles, and I have pleasure in doing so. Prior to their having been put in by you I had first used a two ply leather belt, 12 inches wide, of the best quality, which only lasted a few weeks; then I got a six-ply rubber one, same width, made specially, and it also gave out in about a month, the trouble being the quarter twist on short distance between centres, ten feet, and the high rate of speed called for. Your pulleys have now been in use over six months, and with a 5/8 inch manilla rope the full power required is transmitted steadily, and with great regularity, since it does not slip, as the leather and rubber belts did, while very considerable power is saved. They have realized to the full all that was promised from them, to my entire satisfaction.

Yours respectfully,

JAMES MASSIE, Warden.

# FOOD FOR THOUGHT

BY

JOHN MORLEY

• • I think one of the most satisfactory tests as regards the driving qualities of a belt over a wood or iron pulley, was made at the J. A. McKinnon Machinery Company's store, 22 Warren Street, New York, recently.

An upright engine was used, on which was placed for a drive an iron pulley, 42" diameter, 10" face, driving onto a Dodge Wood Split Pulley, 20" diameter of the same face as the iron pulley.

On this driven shaft was placed a Dodge Wood Split Pulley, 54" diameter, which became a driver for an electric light dynamo.

The test consisted in blocking the engine driving pulley with a bar, and taking hold of the driving belt on the dynamo, keeping the same in motion, together with the engine drive-belt (which was strained up taut); but the belt slipped around the large iron pulley, while it hugged the small wood pulley, without a perceptible slip at this point.

There was at least 70 per cent. more belt surface in contact with the iron pulley than with the wood, which makes a practical demonstration of the fact that a wood pulley will drive from 40 to 60 per cent. more machinery, with the same tension of belt, than iron with like tension.

I will add that the iron pulley was in prime condition as to face for belt drive.

This remarkable test is attracting a great deal of attention, and it is well worth an investigation. Mr. McKinnon will at all times be happy to demonstrate this experiment to those interested.

Such experiments effectually settle the fact that the use of iron pulleys must soon become a thing of the past, and that wood pulleys are as certain to take their place in all first-class manufactories.

The Dodge Manufacturing Co., of Mishawaka, Indiana, have been awarded the contract for equipping, throughout, the new carriage factory of the Studebaker Bros., Manufacturing Co., located on Michigan Avenue, Chicago, Ill., with their patent Independence Wood Split Pulleys. They will also put in one of the Dodge Rope Transmission Systems, to carry power from the basement to the eighth floor. It will require over one hundred pulleys for the new factory. As this will be the model carriage repository and factory of the world, it speaks well for the merits of the Dodge Wood Split Pulleys and their Rope Transmission System. The Studebaker Brothers have also had large numbers of these pulleys in use at their South Bend (Indiana) works for a number of years.

## ... NOTICE ...

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◆ ◆ **W**E are manufacturing our **Dodge Independence Wood Separable Pulley**, for which we claim the following points of merit:

**Best Belt Surface. Best Shaft Fastening.**

**Our Patent Wood Bush system, for Shaft Fittings. 70 per cent. lighter than iron.**

**30 to 60 per cent. more power with same belt, with less Tension.**

**As less tension is required, the life of a belt is much longer when used on a wood pulley.**

If you have not as yet our **Catalogue** of the above, we will be pleased to mail you the same **Free**, upon application.

**With our system of Manilla Rope Transmission** is overcome the objection to Wire Rope, (because of crystalizing) and gearing, (because of loss of friction) and shafting, (because of the liability to get out of alignment, hence loss of power by friction), and a separate engine plant, (because of its great expense); on the contrary, with the Manilla Rope System, under the Dodge Patents, the power is transmitted with the same efficiency as though the shafts were close together, there being no loss of power by excessive tension, or bad alignment, but simply the friction of the journals to overcome at the carriers, which have a strain of weight of the rope to carry.

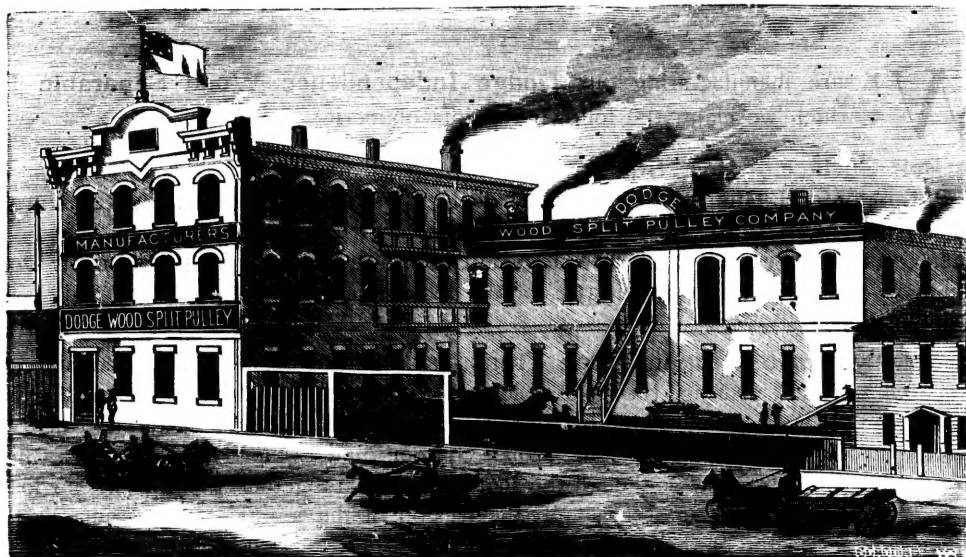
**Dodge Wood Split Pulley Co.**

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**81 to 89 Adelaide St. West**

**- TORONTO**

# Dodge Wood Split Pulley Company



**81-89 ADELAIDE STREET WEST, TORONTO**

MANUFACTURERS OF THE

*Celebrated Dodge Wood Split Pulleys for the transmission of Power by either Ropes or Belts. The cheapest, lightest, strongest, most convenient and effectual Pulley in the market.*



